

IN THE CLAIMS

Claims

I claim:

Claims 1-5, and 10 (withdrawn)

6. (currently amended)

A system for selecting and applying a proper operating voltage for a previously undetermined battery-powered device, comprising:

means for sampling battery voltage of [[a]] the previously undetermined battery associated with said powered device;

means for providing a reference voltage;

means for comparing said sampled battery voltage and said reference voltage;

means for adjusting said reference voltage and selecting a value of said reference voltage that most closely matches said sampled battery voltage; and

means for powering said powered device from a power source having an output voltage equal to said selected value of said reference voltage in the absence of [[a]] said battery being connected to said powered device.

7. (original)

The system as claimed in Claim 6, comprising:

means for providing a visual indication signifying that said sampled battery voltage and said adjusted reference voltage are most closely matched.

8. (original)

The system as claimed in Claim 7, comprising:

means for choosing the next higher value of reference voltage when said sampled battery voltage is in between two values of reference voltages, one value being below said sampled battery voltage and one value being above said sampled battery voltage.

9. (original)

The system as claimed in Claim 6, comprising:

means for protecting said power source from being inadvertently connected to said battery.

11. (new)

An apparatus for applying a power signal to previously undetermined battery-powered device, comprising:

a transportable power-conversion module having two sets of at least two conductors each, the first set terminating at a source of power, and the second set terminating at a connector interface interposed at an I/O port of said device for selectively accessing said device and said battery, said module further including:

a processor/controller for executing program instructions for acquiring information from the previously undetermined battery as the basis for computing a reference voltage for adjusting an output of a configurable regulator;

a user-manipulable selector also for adjusting said regulator to a voltage value;

a visual indicator for prompting the user as to whether a selected value is valid or invalid, based on the processor comparing each selected value to the reference voltage value;

further program instructions for transferring adjusted voltage information from a local non-volatile memory area to an accessible non-volatile memory area associated with the device;

the user having selected a valid voltage value, said processor/controller provides a distinguishable prompt to said user, configures said regulator to output

a power signal, and writes voltage value information to said memory area of the device,

whereby the power signal is applied to the now-determined device, and later retrieval of information about the power signal from memory associated with said device eliminates future user manipulation of the selector.

12. (new)

The apparatus of Claim 11, further including a second connector located at the module-terminus of said second set of conductors for detaching said conductors from the module as a removable power cord, said memory area being electrically coupled to the conductors either at said connector interface, or at the second connector;

said processor writes said adjusted voltage value to the memory by varying power signals output from said regulator according to a format compatible with the memory, and

by a user later reattaching the now-configured power cord to the apparatus, said processor retrieves the previously stored voltage value from the memory at the connector, compares the value to voltage values previously stored in said local non-volatile memory, then configures the output of said regulator.

13. (new)

The apparatus of Claim 12, wherein said connector interface is also electro-mechanically compatible with a pre-existing power-input jack of the device.

14. (new)

The apparatus of Claim 11, wherein said processor writes said adjusted voltage value to an accessible non-volatile memory area at the device, then later retrieves the voltage value from the device's memory when a user reattaches said module to said device and, after comparing the retrieved value to those previously stored in the local memory, said processor configures the output of said regulator.

15. (new)

The apparatus of Claim 14, wherein said non-volatile memory area is located in the power-input circuit of the device, so that reattaching said device to the apparatus at its power-input jack provides said processor access to the device's memory area by applying a predetermined power signal from the regulator to the memory, thereby eliminating the need to turn on the device in order to access the memory.

16. (new)

The apparatus of Claim 14, further including a modulator/demodulator at both the apparatus and the device for transferring voltage value information by the processor modulating said predetermined power signal along two conductors.

17. (new)

The apparatus of Claim 14, further including a dedicated data I/O connector located on the external housing of the apparatus for mating to a compatible connector located on an accessible external surface of the device, thereby eliminating data-specific conductor-cables.

18. (new)

The apparatus of Claim 11, further including wireless communications for transferring power-related information between the memory areas at said apparatus and at said device.

19. (new)

The apparatus of Claim 11, wherein the memory area is in the device at a location accessible to the apparatus via the I/O port, and the apparatus further includes program instructions for, upon a user reattaching the apparatus to the I/O port, causing the processor to retrieve from the memory the previously-stored voltage value as the basis for then configuring the output voltage of the regulator, thereby eliminating any user manipulation.

20. (new)

The apparatus of Claim 11, further including a spring-driven rotating reel onto which said power cord is retracted and stowed;

a latching mechanism that prevents the extended cord from inadvertently retracting while in use, the unlatching of which is by the user applying a slight over-extension motion to the already extended cord, then releasing said cord;

a receiving housing for capturing said connector plug so that the plug still remains accessible to a user when the cord is in its fully retracted configuration.

21. (new)

The apparatus of Claim 11, wherein said user-manipulable selector is a positionable dial upon which an indicia of a multiplicity of selectable voltage values is displayed.

22. (new)

The apparatus of Claim 11, wherein said user-manipulable selector is a screen displaying an image that shows the voltage value that the user has selected by manipulating a data-input device.

23. (new)

An apparatus for applying a power signal to a battery-powered device, comprising:

A module as a battery enclosure of a dimensional size and shape to fit within an existing battery compartment of said device;

a connector interface located along a suitable exterior surface of the enclosure so as to mate with an existing interface in the battery compartment when the enclosure is installed into the battery compartment;

a connector receptacle exposed along an accessible face of the installed enclosure at which a user connects a mateable plug that is electrically coupled at the terminus of at least two conductors directed to a power source;

a processor for executing program instructions;

a memory area for storing power-related information;

an A/D converter accessible to said processor capable of receiving a wide range of input power signals from either AC or DC power sources;

a first regulator for converting input AC power signals to a DC signal that is compatible with the anticipated power-input requirements of the device;

a second regulator for converting input DC power signals to an output signal that is compatible with said power-input requirements, and

at least one energy storage element as a source of power for said device and internal circuitry of the apparatus;

24. (new)

An apparatus for applying a power signal to a previously undetermined battery-powered device, comprising:

a transportable intermediate module for interconnecting between said device and an AC/DC or DC/DC power-conversion peripheral that requires a user to select from a multiplicity of available voltages a valid output voltage for adjusting the power signal to the device;

two sets of at least two conductors each:

the first set being for receiving power signals from the peripheral, the conductors terminating at a user-accessible receptacle for accepting a power-output plug of the peripheral;

the second set being for power output from the module, with conductors terminating at a connector interface interposed at an I/O port of said device, said interface providing selective access to said device and said battery;

a processor/controller including program instructions for acquiring power-related information from the battery as the basis for computing a reference voltage value that is adjusted to optimize it for each specific device, said optimized voltage value being written to an area of non-volatile memory;

as the user makes selections, a visual indicator prompts the user as to whether a selected value is valid or invalid, based on the processor acquiring and comparing each distinct power signal received;

said processor also for controlling a switch which prevents any invalid received voltage from passing through the module to the device;

the user having selected a valid voltage value, said processor provides a distinguishable prompt to said user, and then allows the power signal from the peripheral to flow to the device.

25. (new)

A system for applying a power signal to at least one of one or more previously undetermined battery-powered devices attached thereto, comprising:

an embedded apparatus having an exposed connector receptacle as a port to which a user connects a device by attaching a compatible connector plug of a power cord, said cord comprised of at least two conductors;

at least two conductors for attaching said apparatus to a power source, and said apparatus further comprising:

a processor/controller for executing program instructions;

an A/D converter accessible to said processor for acquiring power signals from the attached device;

a voltage regulator capable of having its output power signals configured by said processor/controller;

a memory area for storing power-related information; and

an indicator capable of varying its visual characteristics, for prompting said user,

whereby a user attaching the device to the power port causes the processor to acquire information about the device's power requirements, so as to configure the controllable

regulator to output a power signal compatible with said device, then activating the indicator to prompt the user that the device is being powered.

26. (new)

The system of Claim 25, further including in the apparatus a spring-driven rotating reel onto which said power cord is retracted and stowed;

a latching mechanism that prevents the extended cord from inadvertently retracting while in use, the unlatching of which is by the user applying a slight over-extension motion to the already extended cord, then releasing said cord;

a receiving housing for capturing said connector plug so that the plug still remains accessible to a user when the cord is in its fully retracted configuration.

27. (new)

The system of Claim 25, further including in the apparatus wireless communications for transferring power-related information between the said apparatus and said device.

28. (new)

The system of Claim 25, wherein said indicator is a display screen for prompting the user.

29. (new)

The system of Claim 25, further including additional program instructions for acquiring machine readable data that was previously written to a memory area located in said power cord so as to be now accessible to the processor,

whereby retrieving from the memory at the power cord data for determining the power requirements of the device enables the processor to configure said regulator to output the power signal to said device.